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Title: Microscopic description of fission properties

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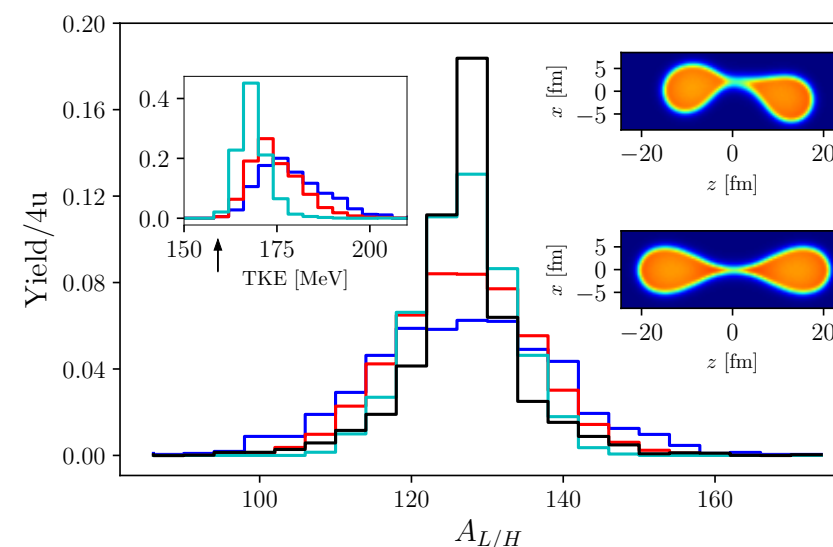
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Microscopic description of fission properties

PI: Ionel Stetcu (T-2)

- Quantum formalism
- All collective degrees of freedom included
- Evolution is unitary
- All symmetries broken during the evolution
- Motion remains overdamped
- The mean field adjust naturally to changes in nuclear shape
- Evolutions times increase when fluctuations are included
- General formalism (dissipative heavy-ion collisions,)
- Formalism tested in a hydrodynamic model
- Implementation and calculations on LANL's IC computing machine Kodiak (efficient use of GPU accelerators)
- Good, but not prefect agreement with experiment



Predicted fission fragment yields for 258Fm

The experiment is shown in cyan. Left insert: total kinetic energy distribution. Right insert: two breakup configurations.

Bulgac, Shi and Stetcu, arXiv:1805.08908 (2018)